We perfused skin inflamed by antigen challenge in volunteer patients with contact allergic dermatoses. Perfusates contained smooth-muscle-contracting activity that, upon further purification and analysis, turned out to be due to a mixture of E and F prostaglandins. This finding provided timely and much-needed direct evidence of the role of prostaglandins in human skin inflammation. [The SC][8] indicates that this paper has been cited in over 205 publications.

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July 29, 1987

Although Sam Shuster, who taught me clinical dermatology at Newcastle-upon-Tyne, was mainly responsible for stimulating my interest in inflammation and anti-inflammatory drugs, he and I wrote only one paper together on the responses of human skin to putative mediators of inflammation. 1 It was obvious to us that any further progress in this field would depend on direct recovery of mediators from inflamed tissue, the accurate definition of these mediators, and the correlation of change in concentration of the intensity of the inflammatory reaction. What better milieu could there be for this purpose than inflamed human skin?

My PhD training in classical organ-bath pharmacology with H.O. Schild and J.L. Mongar at University College London showed me the value of perfused isolated guinea pig lung preparations in recover and characterisation of mediators, and it occurred to Shuster and me that in vivo perfusion of skin of human volunteers was not beyond the realm of possibility.

The technique we used now seems unbelievably crude. Two wide bore needles with holes perforated down the sides of the shaft were inserted into inflamed skin immediately subdermally in parallel, pointing in opposite directions along the long axis of the flexor surface of the forearm. One needle was used to infuse an aqueous buffered isotonic saline solution, and the other was used to recover it. The assumption was that the perfused skin would behave as a sump for mediators released into the inflamed skin. That the method worked is more a tribute to the stoicism of our Newcastle Geordie volunteer patients than to the skills of the team.


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